

A LARGE TILLITE ERRATIC, ORIGINALLY DESCRIBED BY J. E. HYDE, IN CUYAHOGA COUNTY, OHIO¹

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ABSTRACT

An unusually large glacial erratic, believed to be of Gowganda Tillite, has been rediscovered in Mayfield Township, Cuyahoga County, Ohio. Originally described and photographed by J. E. Hyde in 1936, the boulder is considerably larger than any previously reported Precambrian tillite erratics (White, 1939) from Ohio.

INTRODUCTION

In examining the remnants of the late J. E. Hyde's photographic negative collection, now housed in the geology library, Case Western Reserve University, the author discovered negatives of the two accompanying photographs (figs. 1, 2). Large pebble and cobble inclusions, clearly visible in Figure 1, prompted the assumption that the erratic is composed of Precambrian tillite. The peculiar lithology and large size of the boulder make it noteworthy, and initiated an attempt to rediscover this glacial erratic.

Unfortunately, these negatives are an exception to Hyde's usually meticulous labelling, for "Mayfield Township" is the only locality data given. Extensive field work and interviewing of local residents throughout Mayfield Township during the summer and fall of 1971 failed to relocate this unusual boulder until November, 1971, when the author encountered Mr. Frank Holliday, Miner Road, in Highland Heights. Mr. Holliday recalls first seeing the boulder when he was

a boy of seven years, nearly eighty years ago. The erratic lies about 500 yards behind his barn, on the property of Mr. and Mrs. Everett Hosack, east of Miner Road and north of Highland Road, in Cuyahoga County ($81^{\circ}27'15''$ W. longitude and $41^{\circ}33'15''$ N. latitude). Locally, the boulder is referred to as the "Indian



FIGURES 1 (above) and 2 (below). Two views of the Kammerer boulder, taken by Jesse Hyde, May 17, 1936.



Rock" and the "meteor," the latter term doubtless a result of the rock's large size and peculiar lithology.

LOCATION AND DESCRIPTION

The tillite erratic lies on the east side of a small unnamed tributary of the East

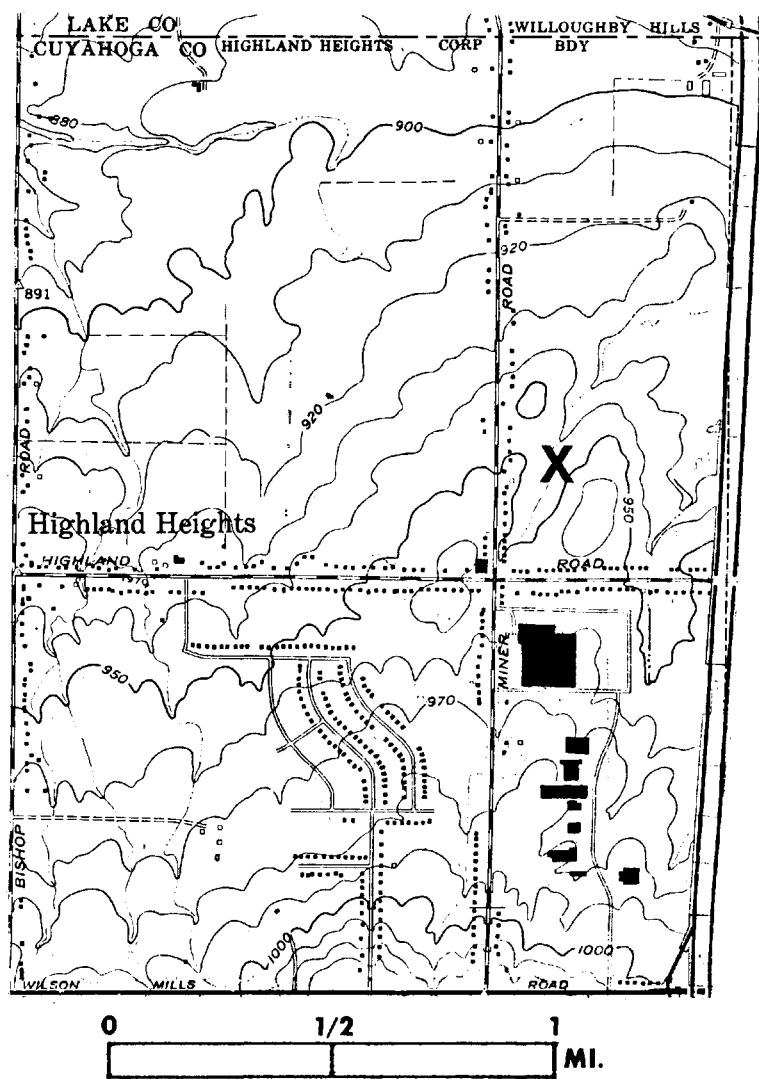


FIGURE 3. Map of portion of Mayfield Heights 7½-minute quadrangle, showing location of the Kammerer boulder (X).

Branch of Euclid Creek, about 500 yards behind the Hosack residence on Miner Road. The location is shown in Figure 3; the boulder in Figure 4.

Subsequent to the rediscovery of the boulder, Dr. John F. Hall, Department of Geology, Case Western Reserve University, located some of Hyde's field notes, including his original description of this glacial erratic. Through the courtesy of Dr. Hall, I am able to quote from Hyde's original description of this erratic, referred to in Hyde's notes of August 31, 1933, as the "Kammerer Boulder."

Mr. Kenneth Taylor reports a large glacial boulder, 6' high and much longer . . . Reported conglomerate, many varieties or pebble (and may be tillite) . . .

On May 17, 1936, Hyde revisited, measured, and photographed the Kammerer erratic. According to his measurements, the boulder is 7 feet 1 inch high, with a maximum diameter (longest axis in fig. 2) of 13 feet. Diameter of the rock as shown in Figure 1 is 9 feet 10 inches. The maximum circumference, at ground level, is 45 feet 6 inches. Hyde was uncertain of the relative size of the buried portion of the boulder. After this reexamination of the boulder, he added that it

appears reasonable to expect half of it is buried. Structure of block & its fracture into parallel planes, of which top is one, make it equally probable that there is a flat bottom which may be only a few inches below the surface.

If Frank Holliday's memory is correct, at least half of the boulder lies buried, for he recalls that many years ago several men dug a pit ten feet deep at the edge of the boulder without encountering the base of the rock. On the other hand,



FIGURE 4. The Kammerer boulder today, deeply hidden in brush. Length of rock is approximately 12-13 feet.

outcrops along a nearby stream indicate that bedrock here lies no more than three to four feet below the surface, suggesting that the erratic does not extend too deeply below the surface.

Hyde's notes gave the following description of the lithology of the Kammerer boulder. This was nearly the last field work in which Hyde engaged, for he died of a heart attack on July 2, 1936.

The matrix is a fine grained, gray, dense material which, to the unaided eye, may have been an old clay such as tillite would require. This is spotted everywhere with grains and small rock fragments in all sizes up to the large boulders on the accompanying sheet [Hyde sketched several of the inclusions, the largest being a "pebble of almost pure orthoclase, very coarse in places, 23 inches long."] The

variety of them is great. Fine grained gray slates which have been less resistant than the matrix are now partly etched out.

All, without noted exception, are rounded, and to an extent such that there are almost no concave outlines seen in cross section. The few holes left by recently removed pebbles, and the few recently uncovered but so far unweathered pebbles agree in this. Only one slight concavity of outline was detected.

The pebbles which have been illustrated from the Precambrian tillite are of this shape also, suggesting mostly water action before being scratched.

DISCUSSION

The most striking lithologic feature of such erratics as the Kammerer boulder is the contrasting color of pink orthoclase granite pebbles and cobbles against the green chloritic matrix. This generally permits easy spotting of such tillite erratics in the field; during the past five years many such erratics have been noted in reworked glacial deposits along nearly every major Ohio stream flowing into Lake Erie. The stone is admirably suited for aboriginal use as celts, axes, and hammerstones; artifacts of this material have been found along Rocky River, Cuyahoga County; at the Globe Hill shell heap along the Ohio River, Hancock County, West Virginia; and on the south end of Pelee Island, Canada (Jane L. Forsyth, personal communication, 1972). Unfortunately, such tillites are usually misidentified by relic collectors as "porphyry."

Of the larger tillite boulders, one that has been discovered stands along East Boulevard in Cleveland, opposite the Cleveland Institute of Music. Another stood along the sidewalk a short distance south of here, but was removed for construction of the Case Western Reserve University law library. Pebbles, cobbles, and boulders of identical "pink and green puddingstone" lithology have been noted in the Vermilion River valley below Birmingham, along the pebble beaches of the Erie Islands, and along most of the north-flowing streams of Ohio. The easternmost occurrence currently known is a boulder about two feet in diameter lying in the bed of Twentymile Creek immediately below the Lake Shore railroad bridge, one-half mile west of the New York state line, Northeast Township, Erie County, Pennsylvania.

Considerable lithologic heterogeneity is revealed by cursory examination of the Precambrian clastic erratics found in northern Ohio. Texturally, the rocks range from coarse consolidated boulder clay to banded slate or argillite of probable fluvio-lacustrine origin. White (1939) noted the association of tillite erratics with banded slates among boulders in Richland County, Ohio, and a careful search in the vicinity of where tillite erratics have been found will sometimes reveal a variety of erratics of glacio-fluvial origin.

It is believed that the Kammerer boulder, as well as many of the other tillite erratics noted along the southern shore of Lake Erie, was derived from Canadian outcrops of Precambrian Gowganda Tillite. Lindsey (1969) has shown that much of the Gowganda Formation represents a true tillite, though some of the sediments appear to have been subjected to water transport and concomitant sorting. He provides some petrologic evidence for distinguishing the Gowganda from similar-appearing sediments of the Bruce Conglomerate. Superficial examination of various reported Ohio "tillite" erratics indicates that some specimens are composed of Bruce Conglomerate. According to Lindsey (1969, p. 1691), specimens of Bruce Conglomerate contain abundant dark shiny quartz grains, with rounded quartz grains being far more common than in the Gowganda conglomerates. The Kammerer boulder, however, as well as the other "pink and green conglomerates" found in the outwash deposits and cobble beaches of northern Ohio, does appear to represent Precambrian tillite of the Gowganda Formation.

ACKNOWLEDGMENTS

The owners of the Kammerer boulder, Mr. and Mrs. Everett Hosack, have taken a particular and kindly interest in this study and have been gracious hosts on my several visits to the site. Mr. Harold Wallin, Cleveland Metropolitan Park naturalist, kindly took me on a tour of North Chagrin Reservation in a preliminary attempt at locating the Kammerer glacial erratic. Considerable correspondence has accumulated in an unsuccessful attempt to identify the gentleman standing beside the boulder in Hyde's photographs; I am nonetheless grateful to Dr. Aurèle LaRocque, Department of Geology, The Ohio State University, and to Dr. William Rice, Department of Geology, Mount Union College, Alliance, Ohio, for their efforts in attempting to identify this person. Dr. John F. Hall kindly made available Hyde's field notes, which he had located. Dr. George W. White, Department of Geology, University of Illinois, also expressed interest in the Kammerer erratic and first encouraged me to locate it.

LITERATURE CITED

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